

TAXONOMY OF CHRYSACTINIA, HARNACKIA, AND  
LESCAILLEA (COMPOSITAE: TAGETEAE)

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Taxa reviewed here are remarkably diverse morphologically, still they form a close, and probably long-distinct, alliance. They are distinguished from other members of Tageteae by the following combination of characteristics:

- 1) Involucre turbinate to hemispheric, usually ecalyculate;
- 2) Phyllaries free to base, narrowly ovate to linear,  $\pm$  carinate, persistent in fruit;
- 3) Heads radiate (except *Lescaillea*);
- 4) Pappus of 20–40 bristles, free to the base; and
- 5) Style branches (disc florets) well-developed and stigmatic almost to the truncate-rounded apex.

These plants have received little attention outside floras or floristic lists. As part of monographic studies in Tageteae, I offer the following key, descriptions, observations, and comments, including accounts of nomenclature, typification, distribution, phenology, and reproductive biology. For poorly known taxa, all specimens seen are cited. For loans or other courtesies, I thank members of the staffs of the following herbaria: A, ASU, C, CAS, DS, E, F, GB, GOET, K, LD, LL, MICH, MO, NMC, NY, P, PENN, PH, POM, RSA, S, SD, SMU, TEX, UC, UPS, US, WIS.

*Chrysactinia* has five species, referred here to three sections. The section with the greatest concentration of primitive character expressions (sect. *Phylloloba*) includes *C. pinnata* and *C. truncata*, which are restricted to Sierra Madre Oriental of Mexico (Fig. 1). Two relatively advanced taxa form sect. *Chrysactinia*: *C. acerosa*, restricted to gypseous soils on western slopes of Sierra Madre Oriental (Fig. 1), and *C. mexicana*, widespread in the Mexican highlands and beyond from Oaxaca to New Mexico and Texas (Fig. 2). *Chrysactinia lehtoae*, which is known from only one locality (northern Sinaloa in Sierra Madre Occidental, Fig. 1), is the sole member of sect. *Tagetifolia*.

*Harnackia* and *Lescaillea* are monotypes endemic to Cuba on serpentine soils (Prov. Oriente and Prov. Pinar del Rio, respectively). *Lescaillea* seems certainly to have been derived from *Harnackia* (or an immediate ancestor) by reduction of leaves and loss of ray florets. *Harnackia* is very similar to *Chrysactinia truncata* with which it must have shared a recent ancestor. These three taxa together with *C. pinnata* are very closely related.

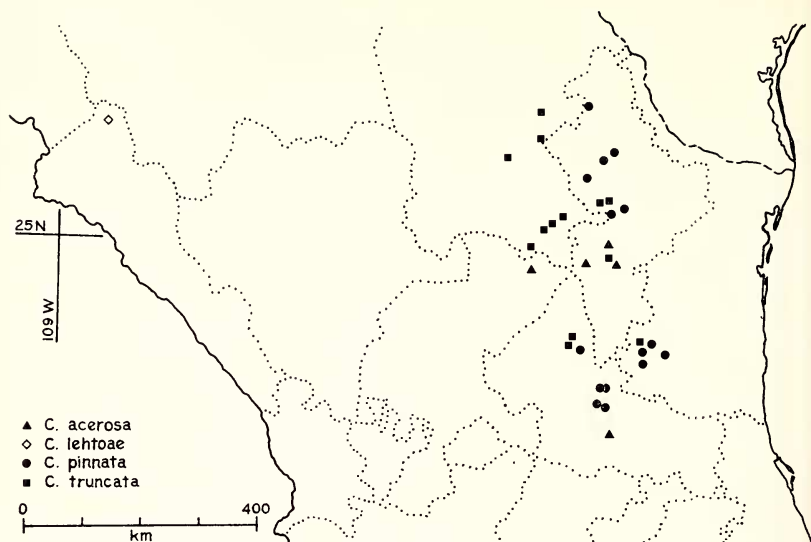


FIG. 1. Distribution of *Chrysactinia* spp.

The Cuban plants probably should be transferred to *Chrysactinia* sect. *Phylloloba*, but they are so little known that I am reluctant to make transfers at this time. An alternative treatment of these four species as a separate genus (*Lescaillea*) seemed appropriate until the recent discovery of *C. lehtoae*, which bridges the considerable morphological gap between sect. *Chrysactinia* and the 'Phylloloba'/Cuban alliance. For the present, a conservative, *status quo* treatment seems preferable.

The relatively restricted and mesic, montane or submontane distributions of *C. lehtoae*, *C. pinnata*, *C. truncata*, *Harnackia*, and *Lescaillea* are interesting in view of the presumably primitive position of these taxa within Tageteae. These may be relictual survivors of taxa delineated early in the history of Tageteae. The nearest allies of these plants are presently referred to *Porophyllum* Guett., which has discoid heads and, for several other characters, differs substantially from taxa treated here. *Nicolletia* A. Gray and *Leucactinia* Rydb. may also belong with this group.

#### Key to *Chrysactinia*, *Harnackia*, and *Lescaillea*

- a. Heads radiate; leaves linear to pinnately divided, not reduced to scales. . . . . b.  
 aa. Heads discoid; leaves reduced to short, appressed, opposite scales. . . . . *Lescaillea*.  
 b. Erect shrubs or subshrubs; leaves pinnately divided into 3–20 lobes or undivided and linear to acerose (*Chrysactinia*). . . . . c.  
 bb. Scandent, suffrutescent plants; leaves pinnately divided into (1–3) linear-cuneate lobes. . . . . *Harnackia*.

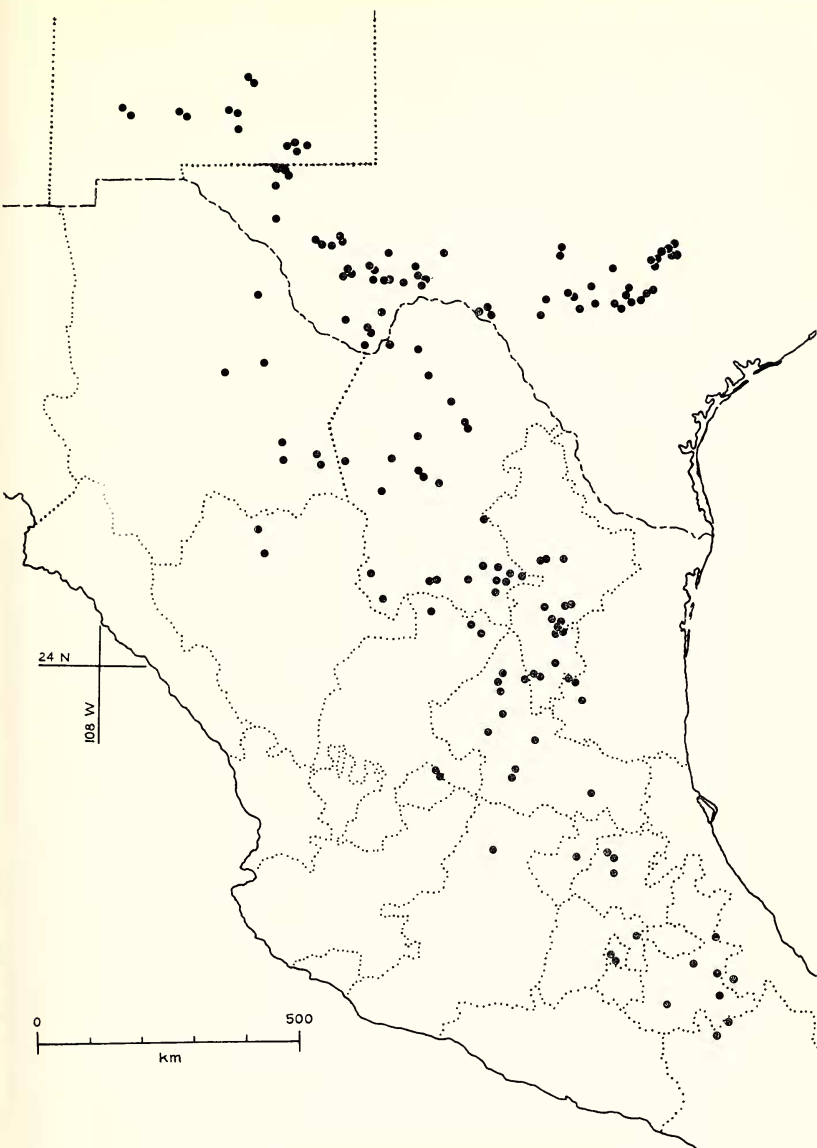


FIG. 2. Distribution of *Chrysactinia mexicana*.

- c. Leaves simple, linear to acerose (*C.* sect. *Chrysactinia*). . . . d.
- cc. Leaves pinnately divided. . . . . e.
- d. Leaves mostly alternate, linear, mostly 1–2 mm wide; phyllaries mostly 13, linear. . . . . *C. mexicana*.
- dd. Leaves mostly opposite, acerose, mostly 0.2–0.4 mm wide; phyllaries mostly 8, ovate. . . . . *C. acerosa*.

- e. Leaf lobes broadly cuneate to obliquely deltoid, 1–4 times longer than wide, bearing a few orange to brownish, pellucid glands (*C. sect. Phylloloba*). . . . . f.
- ee. Leaf lobes lance-linear, 8–12 times longer than wide, bearing numerous submarginal, greenish, pellucid glands (*C. sect. Tagetifolia*).  
 . . . . . *C. lehtoae*.
- f. Leaf lobes 8–12(–20), obliquely deltoid, acute; phyllaries mostly 8.  
 . . . . . *C. pinnata*.
- ff. Leaf lobes 3–7(–13), cuneate, truncate-apiculate; phyllaries mostly 13. . . . . *C. truncata*.

CHRYSACTINIA A. Gray, Mem. Amer. Acad. Arts, ser. 2. 4:93. 1849.  
 [Plantae Fendlerianae] TYPE: *Chrysactinia mexicana* A. Gray.

Evergreen, glabrous to puberulent shrubs or suffrutices, mostly 1–8 dm high at anthesis. Leaves opposite or alternate, simple and acerose to  $\pm$  linear or pinnately divided into lobes or leaflets, variously dotted with few to numerous, marginal or submarginal pellucid glands containing strongly scented oils. Heads solitary, terminal, peduncled to sessile. Peduncles slender, glabrous to puberulent, usually bracteolate. Involucres turbinate to hemispheric, 3–8 mm high. Calyculum none. Phyllaries mostly 8 or 13, free to the base, linear to ovate, usually carinate, persistent and remaining erect or becoming reflexed at maturity, usually each bract bearing 1–5 pellucid oil glands. Receptacle slightly convex to hemispheric, alveolate, glabrous or rose-hispid around the sockets, rarely bearing a few slender, deciduous paleae (*C. mexicana*). Ray florets mostly 8 or 13, pistillate, fertile; corollas yellow to orange, laminae mostly narrowly elliptic to linear-ovate. Disc florets 12–50(–70), perfect, fertile; corollas yellow, slender, cylindro-funnelform, glabrous to variously glandular-puberulent, tube much shorter than the throat, lobes 5, deltoid to lanceolate, erect to spreading or reflexed; anthers slender, minutely sagittate, collars 3–5 times as long as wide, apical appendages ovate to lanceolate; style branches often distally papillate-hispidulous, stigmatic almost to the truncate to rounded apex. Achenes slenderly to stoutly cylindrical to fusiform, blackish, striate, subglabrous to hispidulous with short, whitish, antrorse hairs. Pappus of 20–40 tawny, free, uniseriate, subequal bristles, mostly longer than the achene.

CHRYSACTINIA A. Gray sect. PHYLLOLOBA S. F. Blake, Proc. Amer. Acad. Arts 51:525. 1916. TYPE: *Chrysactinia pinnata* S. Wats.

CHRYSACTINIA PINNATA S. Wats., Proc. Amer. Acad. Arts 25:154. 1890.  
 TYPE: Nuevo Leon, "On limestone ledges of mountains near Monterey" (Saddle Mountain, near 25°40'N, 100°20'W, cf. Davis, 1936), 28 May 1889, *Pringle 2524* (Holotype: US!; isotypes: BM! DS! E! F! GH! K! MO! NY(2)! PH! UC!).

Shrubs or suffrutices with erect, little branched, slender, terete stems from a rhizomatous(?) base, 6–8 dm high; internodes 25–45 mm long. Leaves mostly opposite, lance-elliptic in outline, 25–45 mm long, coarsely pinnatifid into 8–12(–20) obliquely deltoid, acutely pointed, somewhat coriaceous lobes, most lobes with a dark, pellucid gland in a sinus in the basispic margin. Peduncles 30–65 mm long, bearing 3–5 subulate bractlets; heads held well above foliage. Involucres turbinate, 6–8 mm high. Phyllaries mostly 8, narrowly ovate to lanceolate, basally carinate, marginally and distally scarious, each bract usually bearing a subapical pellucid gland and 1–2 pellucid glands near the basal margins. Ray florets mostly 8; corollas with golden yellow tube ca. 3 mm long, lamina narrowly ovate, whitish above, golden orange below, 4–7 mm long, 1.4–1.7 mm wide, narrowed and minutely 3-toothed at apex, glabrous. Disc florets 20–30; corollas orangish yellow, 4–6 mm long, tube 1.1–1.8 mm long, throat 2.2–3.5 mm long, marked with dark nerves below sinuses, lobes 0.6–0.7 mm long, lanceolate to lance-ovate, erect to spreading or reflexed, minutely papillate, throat (distally) and lobes (abaxially) glandular-puberulent; anthers ca. 2.6 mm long including collar (0.4 mm long) and ovate, blunt apical appendage (0.3–0.4 mm long); style branches ca. 1.8 mm long, papillate-hispidulous distally, stigmatic almost to truncate-papillate apex. Achenes 3–4 mm long, narrowly cylindrical to fusiform, blackish, finely striate, sparsely and evenly hispidulous with short, antrorse hairs on the striae. Pappus of ca. 40 fine, tawny, minutely barbellulate, subequal bristles 4–5 mm long.

Distribution (Fig. 1): *Lechugilla/Hechtia* scrub to submontane matorral and pinyon woodlands, mostly on relatively mesic, north-facing limestone slopes, sometimes bordering streams, in Sierra Madre Oriental of Nuevo Leon, Tamaulipas, and San Luis Potosi (ca. 28°–22°30'N); 600–1700 m; flowering May–Jun(–Nov).

CHRYSACTINIA TRUNCATA S. Wats., Proc. Amer. Acad. Arts 25:154. 1890.

TYPE: Nuevo Leon, "Summit ledges of the Sierra de la Silla" (Saddle Mountain, near 25°40'N, 100°20'W, *vide* Davis, 1936), 5 Jun (labels) or 16 Jul (see Davis, 1936) 1889, *Pringle 2601* (Holotype: US!; isotypes: BM! GH! K! MICH! MO! NY(2)! PH! UC!).

Shrubs or suffrutices, compact, much branched, 3(+?) dm high; old stems with thick, corky bark, young stems terete, striate, glabrous; internodes 10–20(–30) mm long. Leaves opposite or alternate, ovate to elliptic in outline, 20–45 mm long, pinnately divided into 3–7(–13) cuneate, entire or coarsely dentate, apically truncate-apiculate lobes, most lobes and some of the distal teeth bearing apical, subulate processes each subtended by a dark pellucid gland. Peduncles 15–30(–65) mm long bearing 3–5 subulate, glandless bractlets; heads usually held well above the foliage. Involucres broadly turbinate, 4–6 mm high. Phyllaries mostly

13, narrowly ovate to lanceolate, carinate, marginally and distally scarios and erose-ciliolate, each bract usually bearing a conspicuous, oval pellucid gland subapically and sometimes 1–2 pellucid glands near basal margins. Ray florets mostly 13; corollas mostly golden yellow, tube 1.5–2.6 mm long, lamina linear, 7–8(–12) mm long, 2(–3) mm wide, apically shallowly 3-lobed, glabrous. Disc florets 35–50; corollas dull yellow, 3.6–6.2 mm long, glabrous, tube 0.6–1.7 mm long, throat 2.4–3.8 mm long, lobes 0.6–1.0 mm long, lanceolate, papillate; anthers 2.3–3.5 mm long including basal collar (0.3–0.4 mm long) and lanceolate to ovate apical appendage (0.3–0.6 mm long); style branches 1.0–1.3 mm long, stigmatic almost to the conspicuously papillate-hispidulous apex. Achenes 2.8–3.9 mm long, weakly prismatic to fusiform, blackish, striate, sparsely hirtellous with subappressed, antrorse hairs ca. 0.1 mm long on the striae. Pappus of 25–30 coarse, tawny, barbellulate, subequal bristles 4–6 mm long.

Distribution (Fig. 1): Chaparral or oak/pinyon woodlands, mostly on relatively mesic north-facing slopes in limestone sierras along eastern border of Chihuahuan Desert, Sierra Madre Oriental of Coahuila, Nuevo Leon, Tamaulipas, and San Luis Potosi (ca. 28°–23°30'N); 1250–2550 m; flowering late May–mid Aug (–Oct).

One collection treated here as *C. truncata* (near 23°23'N, 99°51'W, Johnston *et al.*, 11179, LL) is morphologically anomalous. Leaf form and texture suggest that it may be a product of hybridization between typical *C. truncata* and *C. pinnata*. The latter is known from a nearby locality (near 23°21'N, 99°40'W, Johnston *et al.*, 11162c, LL). Pollen stainability for the aberrant collection is 47%. In four other collections of *C. truncata*, pollen stainabilities range from 79–98%. A fifth collection (near 23°35'30"N, 100°53'20"W, Johnston *et al.*, 11081, LL), has 38% stainability and is morphologically typical *C. truncata*. Pollen stainabilities for five collections of *C. pinnata* range from 84–95%.

**Chrysactinia** A. Gray sect. **Tagetifolia**, sect. nov. TYPE: *Chrysactinia lehtoae* Keil.

A ceteris sectiones *Chrysactiniae* lobis foliorum lanceolato-linearibus et glandulis pellucidis viridulis submarginalibus numerosis punctatis differt.

CHRYSACTINIA LEHTOAE Keil, Madroño 23:374. 1976. TYPE: Sinaloa, 18 mi NE of Coix, near 26°50'N, 108°11'W, 1300 m, 25–26 Nov 1975, Nash, Landye, and Lehto L19551 (Holotype: ASU!).

Shrublets to 3 dm high; young stems terete, dark reddish brown; internodes 12(6–14) mm long. Leaves opposite, lance-elliptic in outline, 25–40 mm long, pinnately divided into mostly 7–9 lance-linear lobes 12–20 mm long, 0.5–1.8 mm wide, bearing numerous, ovate, greenish

pellucid glands along margins at 1–3 mm intervals. Peduncles ca. 2 cm long, bracteolate; heads held scarcely above subtending foliage. Involucres broadly turbinate, ca. 5 mm high. Phyllaries 13, narrowly lanceolate to linear, somewhat carinate, very narrowly scarious-margined, apical margins minutely erose-ciliolate, each bract bearing a prominent pellucid gland subapically and 2–4 inconspicuous, lateral glands near the base. Ray florets 12–13; corollas bright yellow, tube ca. 3.5 mm long, lamina elongate-oblong, ca. 8 mm long, 2.8 mm wide, distally thickened and minutely 3-toothed, tube (distally) and lamina (proximally) sparsely glandular-puberulent; style branches ca. 1.8 mm long, apices papillate, rounded. Disc florets ca. 40; corollas greenish yellow, ca. 5.5 mm long, tube ca. 1.8 mm long, throat ca. 3.2 mm long, lobes ca. 0.6 mm long, deltoid, erect, thickened, minutely papillate, throat and lobes glandular-puberulent; anthers ca. 2.7 mm long including collar (0.4 mm long) and ovate apical appendage (0.4 mm long); styles branches ca. 1.8 mm long, stigmatic almost to papillate, rounded apex. Achenes (immature) ca. 3 mm long, slender, blackish, striate with white, antrorse hairs 0.05–0.09 mm long on the striae. Pappus of 25–30 coarse, tawny, barbellulate bristles 4–5 mm long.

Distribution (Fig. 1): Known only from the type collection.

CHRYSACTINIA A. Gray sect. CHRYSACTINIA.

CHRYSACTINIA ACEROSA S. F. Blake, Proc. Amer. Acad. Arts 51:524. 1916. TYPE: San Luis Potosi, Sierra de Guascama, Minas de San Rafael (near 23°13'N, 100°15'W, *vide* Sousa S., 1969), Jun 1911, *Purpus* 5136 (Lectotype [here designated]: US!; isotypes: BM! E! F! GH! MO! NY! UC!).

Compact shrublets 1(–2) dm high; young stems slender, terete, glabrous to minutely puberulent. Leaves mostly opposite, antrorse, acerose (rarely with 1–2 lateral lobes), 4–12 mm long, 0.2–0.5 mm wide, somewhat succulent, pungent-tipped, glabrous to minutely hispidulous, dotted with numerous pellucid glands. Peduncles short (2–15 mm), sparsely glandular-puberulent, usually bearing 1–5 subulate bractlets. Involucres broadly turbinate to campanulate, 3–4 mm high. Phyllaries 8, ovate, carinate, scarious-margined, erose-ciliolate distally, each bract usually bearing a single, ovate pellucid gland subapically, bracts spreading but not reflexed at maturity. Ray florets 7–9; corollas bright yellow, tube ca. 1.2 mm long, lamina linear, 7–8 mm long, 1.5–2.5 mm wide, often with 1–3 orange pellucid glands near the minutely 3-lobed apex, glabrous; style branches unequal. Disc florets 12–15; corollas yellow, ca. 5.5 mm long, glabrous, tube 1.2–1.4 mm long, throat 3.4–3.7 mm long, lobes 0.6–0.8 mm long, lance-triangular, erect, 0–3 bearing orange pellucid glands; anthers ca. 3 mm long including collar (0.5 mm long) and lance-

ovate appendage (0.6 mm long); style branches ca. 1.3 mm long, shaggy-papillate distally, stigmatic almost to the rounded-conical apex. Achenes ca. 2 mm long, stoutly cylindrical, blackish, striate, sparsely hispidulous with short (0.1 mm), antrorse hairs on the striae. Pappus of 20–30 coarse, tawny, scabrellous bristles 4–5 mm long.

Distribution (Fig. 1): Poorly known; gypseous outcrops in desert scrub or pinyon woodlands in mountains of eastern Chihuahuan Desert and southeast in San Luis Potosi (ca. 24°50'–22°20'N).

Specimens seen in addition to types: Nuevo Leon, W of San Roberto Junction, near 24°36' N, 100°38' W, 2100 m, 19 Jun 1972 (anthesis), *Chiang et al 8019*, LL. Nuevo Leon, W of Galeana, near 24°41' N, 100°10' W, 20 Jun 1972 (anthesis), *Chiang et al. 8038*, LL. Nuevo Leon, 17 mi E of San Roberto Junction then 2 mi S on dirt road, 24 Oct 1970 (anthesis), *Turner and Crutchfield 6321*, TEX. Zacatecas, Concepcion del Oro, 2600–2700 m, 18–19 Jun 1934 (anthesis), *Pennell 17431*, NY, US.

CHRYSACTINIA MEXICANA A. Gray, Mem. Amer. Acad. Arts, ser. 2. 4:93.

1849. TYPE: In protologue, Gray cited, "Dry valley west of Saltillo, April; and on high grounds near Buena Vista, May, *Dr. Gregg*. Also at 'Ojo del Agua,' near the city of Mexico? *Dr. Halstead* (in Herb. Torr.)." I have seen specimens labeled as follows: "west of Saltillo" at GH, MO, and NY; "near Buena Vista" at GH, MO, and NY; and "Ojo del Agua" at GH, K, and NY. At GH, the Gregg collections are apparently combined and are associated with a single label, which lists both localities. A small portion of the Halstead material is also mounted on that sheet. Although all these specimens are readily determined as conspecific and likelihood of confusion seems small, I here designate (in spite of questionable locality) *Halstead s.n.* (no date) at GH as lectotype in order to provide a peg on which to hang the name.

*Pectis taxifolia* E. L. Greene, Leafl. Bot. Observ. Crit. 1:148. 1905.

TYPE: New Mexico, Sierra Co., Black Range, Kingston, 5 Oct 1904, *O. B. Metcalfe 1440* (Holotype: US!; isotypes: BM! CAS! E! F! GH! MO! NMC! NY! UC!).

Strict, twiggy shrubs 2–3(–4) dm high; young stems slender, terete, glabrous to puberulous. Leaves mostly alternate, crowded to well-spaced, linear to narrowly oblanceolate or clavate, flattened or subterete and somewhat succulent, 5–10(–23) mm long, mostly 1–2 mm wide, usually apiculate, glabrous to sparsely hispidulous, margins minutely ciliate, conspicuously dotted with greenish pellucid glands near abaxial margins. Peduncles 30–50(15–75) mm long, minutely hispidulous to glabrous, usually bearing 1–7 lance-subulate bractlets; heads usually held well above the foliage. Involucres turbinate to hemispheric, 3.5–5.0 mm high. Phyllaries 13(8–14), linear to lance-linear, often acuminate, carinate, narrowly scarious-margined, ciliate distally, each bract usually bearing a single orange pellucid gland subapically. Receptacle rarely bearing a



few linear-subulate, deciduous paleae (e.g., *Kruckeberg 4746*, UC). Ray florets mostly 13(-8); corollas golden yellow (sometimes drying greenish), tube 1.6-2.5 mm long, lamina oblong to linear, 6.2-11.9 mm long, 1.8-3.6 mm wide, tube (distally) and lamina (proximally) sparsely glandular-puberulent. Disc florets 25-40(15-70); corollas yellow, 4.6-6.9 mm long, tube 1.1-2.6 mm long, throat 2.3-3.7 mm long, lobes 0.7-1.0 mm long, triangular-deltoid, acute or rounded, spreading, papillate, rarely sparsely glandular-puberulent; tube (distally) and throat (proximally) decidedly glandular-puberulent; anthers 1.8-3.3 mm long including collar (0.4-0.7 mm long) and lanceolate to ovate appendage (0.4-0.7 mm long); style branches 1.3-2.3 mm long, stigmatic almost to the papillate-rounded apex. Achenes 3-4 mm long, slender, black, striate, hispidulous with short (0.1-0.2 mm), antrorse hairs on the striae. Pappus of 30-40 coarse, tawny, barbellulate bristles 3.0-5.5 mm long.

Distribution (Fig. 2): Widespread and often common in many vegetation types, mostly on limestone, from southern New Mexico south and east through sierras of central Mexican Highlands to northern Oaxaca (ca. 33°30'-18°N), east on Edwards Plateau to Travis Co., Texas: 200-3100 m; flowering late Mar-early Nov.

Pollen stainabilities for 23 collections of *C. mexicana* from localities throughout its range are low (0-8%) and micrograins are present in all preparations. I found irregular meiosis in all (five) collections studied. Two of these were reported as  $2n = \text{ca. } 45$ ; III's, II's, and I's were noted at first metaphase and laggards were present at first anaphase in both (Strother, 1976). Michael Powell recorded " $n = 20 \pm 2$ ?" on a specimen at TEX (*King 4487*). The only other chromosomal observation for *Chrysactinia* known to me is " $n = 15$ " for *C. pinnata* (Powell and Turner, 1963). I assume that  $x = 15$  for *Chrysactinia* and that *C. mexicana* is triploid.

In spite of irregular meiotic behavior and low pollen fertility, plants of *C. mexicana* seem consistently to set abundant good fruit (*vide* appearance in herbarium specimens—I have not tested germination). Collectively, these observations suggest that reproduction in this taxon is largely or wholly apomictic. Tests of this hypothesis are planned.

HARNACKIA Urban, Feddes Repert. Spec. Nov. Regni Veg. 21:72-73. 1925. TYPE: *Harnackia bisecta* Urban.

A monotypic genus.

HARNACKIA BISETTA Urban, Feddes Repert. Spec. Nov. Regni Veg. 21:73. 1925. TYPE: Cuba, Prov. Oriente, Sierra de Nipe, *Ekman 15154* (Holotype: B(?), destroyed?). Paratypes: Urban cited *Ekman 2312, 9119, 9747, 15154*; I located only *9747* (NY!, Cuba, Prov. Oriente, Sierra de Nipe, in charrascales-tibisiales ad Brazos Dolores, ca. 800 m, "12.7.1919").

*Lescaillea nipensis* Carabia, Mem. Soc. Cub. Hist. Nat., "Felipe Poey" 17:16-17. 1943. TYPE: Cuba, Prov. Oriente, Pinal de Mayari, Sierra del Nipe, Loma del Winch, 18 Apr 1940, *Carabia* 3628 (Holotype: NY!).

Scandent suffrutices or vines; old stems with thick, corky bark; young stems slender (ca. 1 mm diam.), striate-angular, glabrous; internodes 30-60 mm long. Leaves opposite, petioles 2-4 mm long, blades divided into 3 narrow, cuneate lobes 3-6 mm long, each lobe  $\pm$  truncate and usually bearing a lance-subulate process subtended by a conspicuous, swollen pellucid gland. Heads solitary at ends of branches, peduncles mostly 15-30 mm long, 0-1 bracteolate. Involucres turbinate, 3.5-4.5 mm high. Calyculum of 0-2 lanceolate bractlets. Phyllaries 7-8, free to the base, narrowly lanceolate to lance-ovate, weakly carinate, scarious-margined, each bract usually bearing a conspicuous pellucid gland subapically. Receptacle slightly convex, alveolate, naked. Ray florets 3-5, pistillate, fertile; corollas yellow(?), tube slender, ca. 2 mm long, lamina narrowly elliptic, ca. 4.5 mm long, 1.5 mm wide, entire; style branches 1.3 mm long, stigmatic almost to the rounded, papillate-hispidulous apex. Disc florets ca. 10, perfect, fertile; corollas yellow(?), narrowly funnel-form, ca. 5 mm long, glabrous, tube ca. 0.9 mm long, throat ca. 3.5 mm long, lobes 5, ca. 0.6 mm long, lance-ovate, erect, minutely papillate, glandless; anthers ca. 2.7 mm long including collar (0.3 mm long) and lance-ovate appendage (0.3 mm long); style branches ca. 1.8 mm long, stigmatic almost to the minutely papillate-hispidulous, conical-rounded apex. Achenes 2-3 mm long, slender, cylindric to weakly angled, blackish, striate, minutely hairy distally. Pappus of ca. 35 fine, uniseriate, subequal, barbellulate bristles 3.5-4.5 mm long, weakly united at base.

Specimens seen in addition to types: All from Cuba, Prov. Oriente, Sierra de Nipe, ca. 500-800 m, near 20°30' N, 75°45' W. Pinal Colorado, Cayo Rey, serpentine barrens, 7 Jan 1956, *Alain*, 4927, NY. La Cueva, serpentine barrens, 27 Jul 1940, *Alain* 19276, NY. Same locality, 6 Apr 1941, *Alain* 19875, NY. Rio Naranjo, about the falls, 3 Feb 1910, *Shafer* 3862, NY.

Carabia (op. cit.) cited the following as being at GH: "Oriente, Sierra de Nipe, serpentine hills 15 km. from Woodfred, R. A. Howard no. 6092." In spring 1975, Dr. Howard reported (pers. comm.) ". . . we have been unable to find . . ." *Howard* 6092 at GH.

LESCAILLEA Griseb., Catalog. Pl. Cubens. 156-157. 1866.—*Porophyllum* sect. *Lescaillea* (Griseb.) Gomez de la Maza, Anales Soc. Esp. Hist. Nat. 19:277. 1890, "Porophyllum". TYPE: *Lescaillea equisetiformis* Griseb.

A monotypic genus.

LESCAILLEA EQUISETIFORMIS Griseb., *Catalog. Pl. Cubens.* 157. 1866—*Porophyllum equisetiforme* (Griseb.) Gomez de la Maza & Molinet, *Anales Soc. Esp. Hist. Nat.* 19:277. 1890, 'Porophyllon'. TYPE: "Cuba occ.", 1863, *C. Wright 2868* (Holotype: GOET!; isotypes: BM! G! GH! K! MO! NY! P! S! [Notes with specimen at GH indicate that *Wright 2868* is a pooling of at least four gatherings from "San Marcos" and "Bahia Honda"]).

Scandent suffrutices or vines; old stems with thick, corky bark; young stems slender (1–2 mm diam.), striate-ribbed, glabrous; internodes 30–50 mm long. Leaves opposite, reduced to appressed, lance-ovate scales ca. 1.5 mm long, each bearing a conspicuous pellucid gland. Heads solitary at ends of branches, peduncles rather long, slender. Involucres turbinate, 3.5–4.8 mm high. Calyculum of 0–3 lanceolate bractlets. Phyllaries 7–8, free to the base, linear to narrowly lance-elliptic, basally thickened, navicular, persistent and reflexed at maturity, each bract bearing a pellucid gland subapically. Receptacle flat to slightly convex, alveolate, glabrous. Ray florets none. Disc florets (8–)12–20; corollas greenish yellow, tipped with purple, funnellform, ca. 4.5 mm long, glabrous, tube ca. 0.9 mm long, throat ca. 3 mm long, lobes 5, lance-ovate, erect, 0.6 mm long minutely papillate, each bearing a pellucid gland subapically; anthers ca. 2.2 mm long including collar (0.4 mm long) and ovate appendage (0.3 mm long); style branches ca. 1.8 mm long, stigmatic almost to the rounded, papillate-hirsutulous apex. Achenes ca. 4 mm long, slender, weakly angled, dark brown, striate, sparsely hairy distally, otherwise subglabrous. Pappus of ca. 35 reddish brown, free, uniseriate, subequal, barbellulate bristles 3–4 mm long.

Specimens seen in addition to types: All from Cuba, Prov. Pinar del Rio, near 22°45'N, 83°30'W. Cajalbana La Palma, serpentine barren, 3 Dec 1949, *Alain 1340*, NY. Loma de Cajabana, in cuabales, 10 Mar 1920, *Eckman 10470*, S. Same locality, 2 Jan 1921, *Eckman 12718*, NY, S. Pan de Cajalbana, grimpante, sur les buissons, 6 Apr 1915, *Leon and Charles 4937*, NY, P, S.

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